REMARKS

Claims 28-46 were examined, and all claims were rejected. In this Response, no claims have been added or canceled, and no amendments have been requested. Applicants present the following arguments in support of the current claims.

I. Claims Rejected under 35 U.S.C. § 102(e)

The Examiner rejected claims 28-40 under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,789,037 issued to Gunther *et al.* ("*Gunther*"). It is axiomatic that for a reference to anticipate a claim, the reference must teach every element of the claim. For at least the following reasons, Applicants believe *Gunther* fails to anticipate the rejected claims.

As to claim 28, that claim recites an apparatus comprising, *inter alia*, a processing unit to apply a mathematical function to yield a *deterministic estimate* of an overall power consumption. The Examiner asserts that *Gunther* teaches this processing unit in the discussion at column 7, line 43 through column 8, line 51. However, Applicants point out that *deterministic*, in the probabilistic sense, means "a system whose time evolution can be predicted exactly." (*The Free On-line Dictionary of Computing*, © 1993-2004 by Denis Howe). The time evolution of *Gunther*'s system *cannot* be predicted exactly, because the system includes a temperature detection element **220** that is explicitly understood to produce an electrically noisy signal (*see, e.g.*, col. 6, lines 4-6). Even if the noise was *completely* filtered out (instead of only "substantially eliminate[d]"), the fact remains that the circuit operates differently depending on the ambient temperature and heat transfer away from the semiconductor die, as well as intrinsic properties of the semiconductor itself that can vary from one unit to another. The inclusion of this analog sensor means that a chip employing *Gunther*'s thermal management technique will behave differently from test to test, and two chips will behave differently from each other. In other words, the behavior will not be *deterministic*.

Furthermore, the Examiner fails to identify in *Gunther* a specific signal or digital value that is the claimed estimate of an overall power consumption. Applicants note that the up-down counter mentioned in the cited passage counts transitions of the output of a comparator, which is itself part of the noisy temperature sensor circuit **222**. The value of the counter is neither an estimate of overall power consumption, nor even a deterministic value.

For at least the reasons discussed above, Applicants believe that *Gunther* fails to anticipate claim 28. The Examiner is respectfully requested to withdraw the rejection of this claim.

As to claims 29-34, those claims depend directly or indirectly upon claim 28, and are patentable for at least the reasons discussed in support of that base claim. Applicants request that the rejections of these claims be withdrawn as well.

As to claim 35, that claim is rejected with reference to the same portion of *Gunther*. However, the claim incorporates the limitation that a mathematical function generate a *deterministic estimate* of an overall power utilization of the integrated circuit. As discussed above, *Gunther* does not generate a *deterministic* estimate, and does not generate an estimate of *overall power utilization of the integrated circuit*. For at least those reasons, Applicants submit that *Gunther* fails to anticipate claim 35, and request that this rejection be withdrawn.

As to claims 36-40, those claims depend directly or indirectly upon claim 35, and are patentable for at least the reasons discussed in support of that base claim. Applicants request that the rejections of these claims be withdrawn as well.

II. Claims Rejected under 35 U.S.C. § 102(b)

The Examiner rejected claims 41-46 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,719,800 issued to Mittal *et al.* (*"Mittal"*).

As to claim 41, that claim recites a machine-readable medium containing instructions that, when executed by a machine, cause the machine to perform

operations comprising counting a number of times a first functional unit of the machine is activated and applying a mathematical function to generate a deterministic estimate of an overall power utilization of the machine. The cited portion of *Mittal* discusses estimating the power consumed by an IC performing the operations *in a benchmark suite of typical operations* (emphasis added; *see* col. 1, lines 61-64), but no machine-readable medium containing instructions to perform the estimation is mentioned. In fact, it is not clear who or what performs the estimation, although the context suggests that the estimate might be made during system design, when one was interested in, for example, estimating the battery life of a portable computing device under normal use. At any rate, estimating the power consumed in a benchmark suite of typical operations is different than estimating the overall power utilized by the machine based on an actual count of the number of times a first functional unit of the machine is activated.

Although *Mittal* does teach counting the number of times various functional units are activated (*see, e.g.*, col. 6, lines 8-26), the counts are not used to generate a deterministic estimate of overall power utilization. Instead, *Mittal* teaches using the counts to calculate functional-unit utilization (also called "activity level" and "duty cycle." *See* col. 5, lines 30-37.) Even where the utilization of multiple functional units is considered in making throttling decisions, the power coordinator makes its decision based on the *activity level*, not on a deterministic estimate of overall power utilization (*see* col. 11, lines 21-25 and lines 54-62).

Since *Mittal* does not teach applying a mathematical function to generate a deterministic estimate of an overall power utilization of the machine, Applicants submit that the reference fails to anticipate claim 41, and respectfully request the Examiner to withdraw this rejection.

As to claims 42-46, those claims depend upon claim 41, and are patentable for at least the reasons discussed in support of that claim. Applicants ask the Examiner to withdraw the rejections of these claims as well.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely claims 28-46, patentably define the subject invention over the prior art of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207-3800.

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Respectfully submitted,
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Lillian E. Rodriguez 12-20-04

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